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OCTOBER 1980

NUMBER THREE

GYPSY MOTH NEWS

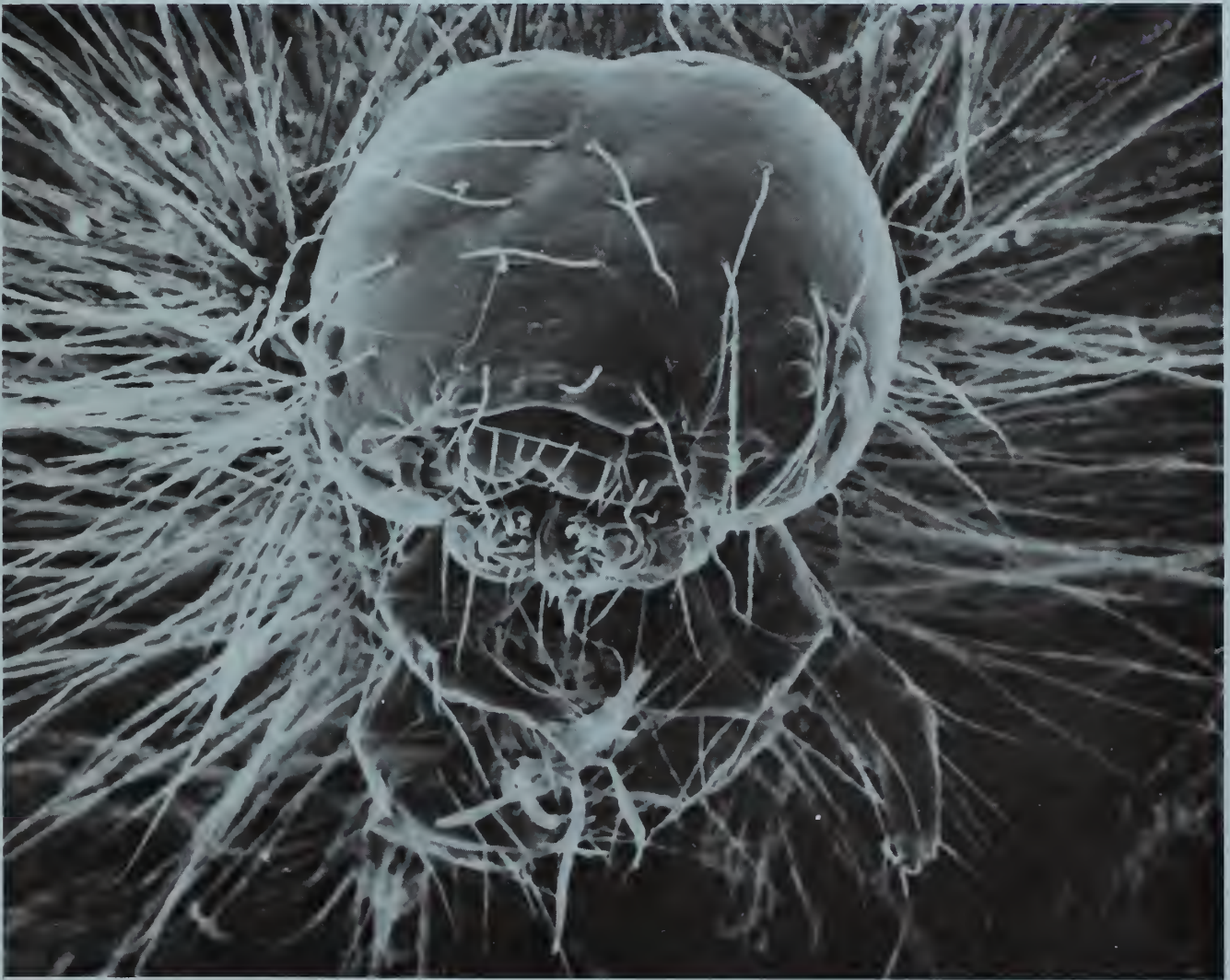
370 REED ROAD, BROOMALL, PA 19008
U.S.D.A., FOREST SERVICE

LOOK OUT!
HERE COMES THE GYPSY MOTH

CLINTON ST. FALL KILN, ORBS

JUL 13 '81

APR 1981
FALL KILN



Compiled by the Forest Insect and Disease Management Staff, Morgantown, WV.

FROM MAINE TO MARYLAND GYPSY MOTH DEFOLIATION IN 1980
 EXCEEDED 5 MILLION ACRES. COMPARED TO 1979 THIS AMOUNTS
 TO AN INCREASE OF OVER 800 PERCENT!! HERE ARE THE FINAL
 DEFOLIATION FIGURES FOR THE NORTHEASTERN STATES.

| <u>STATE</u> | <u>1980 DEFOLIATION ACRES</u> | <u>TREND OVER 1979</u> |
|---------------|-------------------------------|------------------------|
| NEW YORK | 2,800,000 | + |
| MASSACHUSETTS | 907,074 | + |
| PENNSYLVANIA | 440,500 | + |
| NEW JERSEY | 411,975 | + |
| CONNECTICUT | 372,213 | + |
| MAINE | 221,220 | + |
| NEW HAMPSHIRE | 183,999 | + |
| RHODE ISLAND | 43,830 | + |
| VERMONT | 75,094 | + |
| DELAWARE | 10 | + |
| MARYLAND | 4 | + |
| TOTAL | 5,455,919 | + |

COVER PHOTO: *First instar gypsy moth larvae,
 magnification approximately 140X*



GYPSY MOTH ON THE RISE AGAIN!

Gypsy moth defoliation increased this year along the Appalachian ridge system in central Pennsylvania (upper right). Tuscarora, Conococheague, Shade, and Jacks Mountains experienced heavy defoliation.

Female moths were laying egg masses over most of central Pennsylvania this summer. With scenes like the upper left typical, defoliation next year will probably be worse.

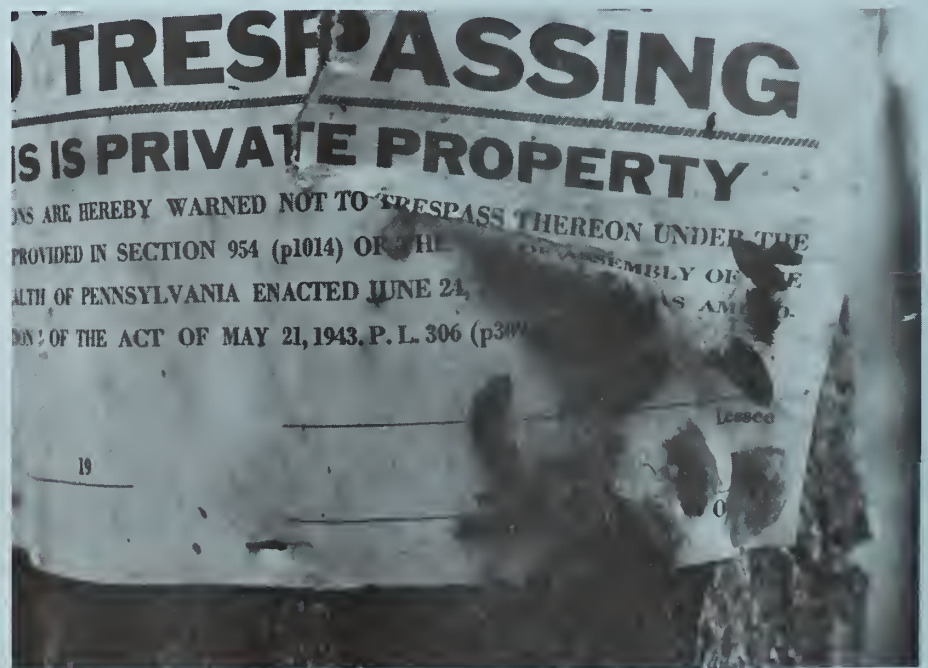
Brown Mills, New Jersey was invaded by gypsy moth this year. Of course, if you live in this house (right) you already know about that.





Healthy egg laying this year could spell trouble for 1981.

*The gypsy
moth has
little regard
for the
wishes of
Forest
Landowners.*



1980 COOPERATIVE SUPPRESSION PROJECTS

THREE STATES PARTICIPATED IN A COOPERATIVE GYPSY MOTH SUPPRESSION PROGRAM THIS SEASON DURING WHICH APPROXIMATELY 97,000 ACRES WERE TREATED.

NEW JERSEY TREATED OVER 44,000 ACRES WITH BACILLUS THURINGIENSIS (BT), AND CARBARYL. THE CONTROVERSY REGARDING THE INSECTICIDE CARBARYL INTENSIFIED THIS SUMMER AND MANY COMMUNITIES DROPPED OUT OF THE PROGRAM AT THE LAST MINUTE, WITH PREDICTABLE RESULTS (UPPER LEFT).



Gypsy moth defoliation in Brown Mills, NJ after that community dropped out of the spray program



New Jersey state and local personnel discuss planned spray activities with contract pilot (white hat, right side)



THE PENNSYLVANIA BUREAU OF FORESTRY TREATED A TOTAL OF 26,872 ACRES IN 14 COUNTIES THIS YEAR. THE PROJECT INVOLVED THE USE PRIMARILY OF DYLOX 1.5 OIL, HOWEVER, 700 ACRES IN CHESTER COUNTY WERE TREATED WITH DIPEL 4L.

THE STATE OF NEW YORK TREATED OVER 26,000 ACRES IN SIX COUNTIES. DYLOX AND SEVERAL FORMULATIONS OF THE BIOLOGICAL BT (DIPEL, THURICIDE) WERE USED.

Project Supervisor, Bill Slippey (standing on truck bed), observes preparation of Dipel 4L. Pennsylvania Bureau of Forestry used the Dipel formulation of Bacillus thuringiensis not only in their cooperative suppression program, but also in an experiment integrated pest management project near Colonel Denning State Park in Cumberland County.



Pennsylvania used this Hiller 12E helicopter from Ag-Rotors, Inc. (left), for their gypsy moth spraying this year.

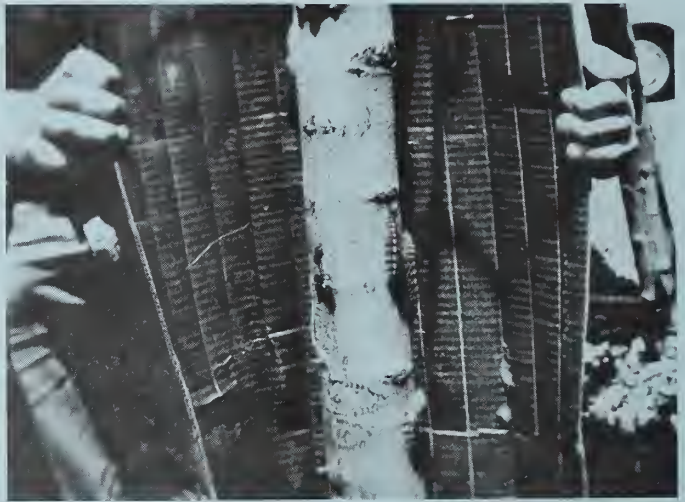
Maurice "Skip" Messersmith, from Ag-Rotors, Inc. checks the nozzle tips, and strainers on the spray boom (below) before loading the aircraft and applying insecticide.



... AND OUTSIDE THE GENERALLY INFESTED AREA

GYPSY MOTH ACTIVITIES WERE NOT CONFINED TO THE NORTHEAST THIS SUMMER. MALE MOTH TRAPPING WAS CONDUCTED IN A VARIETY OF STATES INCLUDING MARYLAND, WEST VIRGINIA, VIRGINIA, DELAWARE, OHIO, INDIANA, ILLINOIS, AND THE LAKE STATES. IN ADDITION, INSECTICIDE TREATMENTS WERE MADE IN OHIO, VIRGINIA, AND MICHIGAN.

MARYLAND AND USDA AGENCIES EVALUATED SEVERAL FORMS OF THE GYPSY MOTH SEX PHEROMONE IN ADDITION TO SPLIT TREATMENTS (I.E., TWO APPLICATIONS) OF THE INSECTICIDES SEVIN, DIMILIN, AND DIPEL, WITH DISPARLURE.



Removal of this cardboard collar (above) from around a Norway Maple revealed that gypsy moth larvae were alive and well in Milwaukee, Wisconsin.



Dr. Charles Schwalbe, USDA Gypsy Moth Methods Development Center, checks Disparlure mixture prior to application in the Oconomowoc Lake area Wisconsin, last year.



Parasite emergence cage (left) placed over a box in the ground where Parasitagena silvestris pupae overwintered. The Maryland Department of Agriculture reports that the highest emergence rate found in any one of these cages was 18%.

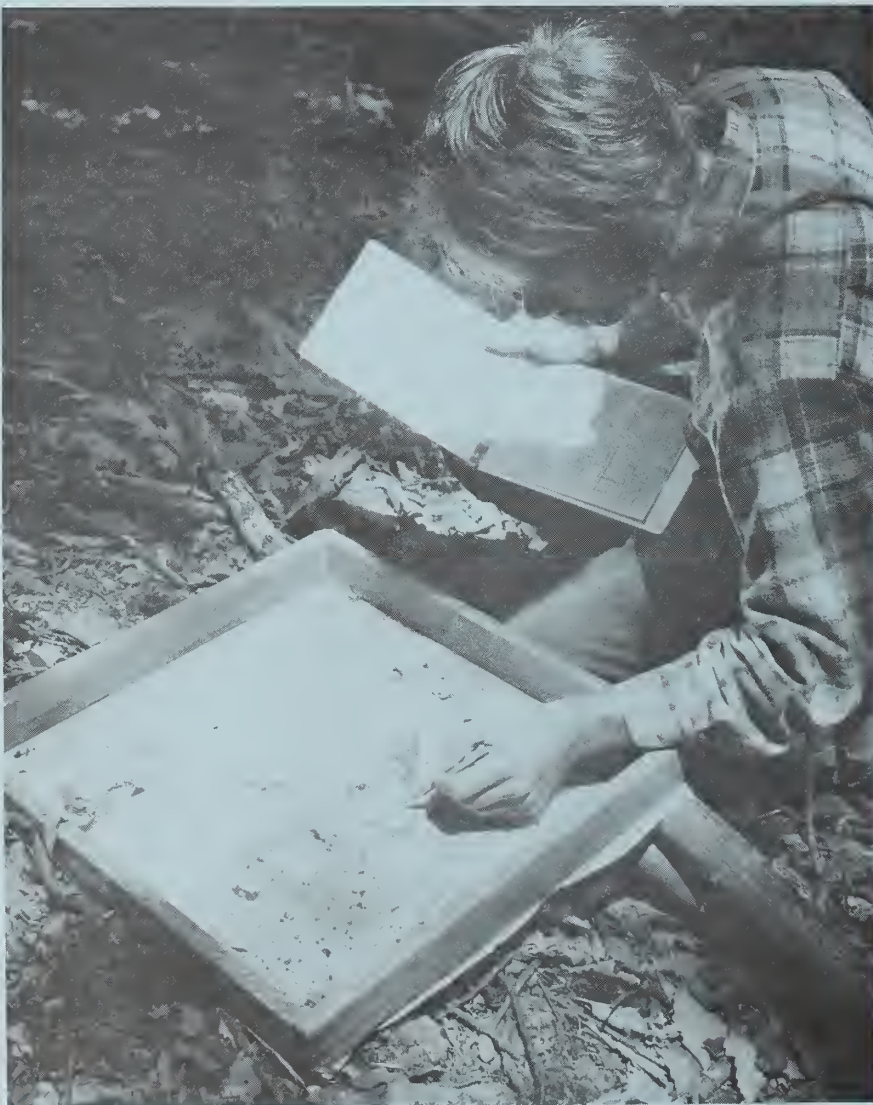
USDA research scientist, Dr. Ralph Webb (below right), is seen here in Maryland's Elk Neck State Forest collecting virgin female gypsy moths for sex attractant experiments.

Lest we forget what we are protecting from gypsy moth--Bob Tatman (below) with Red Oak in Cecil County, Maryland.



PENNSYLVANIA IPM PROJECT

THE PENNSYLVANIA BUREAU OF FORESTRY, DIVISION OF FOREST PEST MANAGEMENT IS EVALUATING AN INTEGRATED PEST MANAGEMENT PILOT PROJECT NEAR COLONEL DENNING STATE PARK IN CUMBERLAND COUNTY. NINE 100-ACRE PLOTS WERE TREATED WITH REDUCED (LESS-THAN-REGISTERED) RATES OF DYLOX, DIPEL, AND DIMILIN (3 PLOTS PER MATERIAL). THE OBJECTIVE WAS TO LEAVE A RESIDUAL GYPSY MOTH POPULATION SUFFICIENT TO ENHANCE PARASITE



Frass traps like this one were used to evaluate gypsy moth larval populations in the IPM study area. Bureau of Forestry Technician, Jim Unger, is shown counting frass pellets.

ACTIVITY, AND TO DEMONSTRATE TECHNIQUES IN MANAGING THE LOW LEVEL GYPSY MOTH POPULATIONS.

Pennsylvania

IPM Study Area:

*The tent-like
structure in the
background is a
malaise trap.*



INSECTICIDE FIELD TESTING

THE GYPSY MOTH METHODS

DEVELOPMENT CENTER LOCATED AT OTIS AFB, MASSACHUSETTS, FIELD TESTED SEVERAL NEW INSECTICIDES THIS SEASON AT SITES IN WESTERN MASSACHUSETTS AND RHODE ISLAND. USDA PERSONNEL EVALUATED TWO NEW BT PRODUCTS--THURICIDE 32B AND DIPEL 4L--AND ONE GROWTH REGULATOR, MOBAY SR 8514. EGG MASS SURVEYS NEED TO BE CONDUCTED THIS FALL BEFORE ALL THE RESULTS ARE KNOWN,



He might appear to be walking his dog, however closer inspection will reveal Win McLane (above) measuring off spray block boundaries in Rhode Island.

Where roads are not available, compass lines and measuring tapes are necessary to set up spray blocks. Here Joyce Finney takes a compass bearing along a spray block boundary. The rope in her hand is of a measured length.



FOREST SERVICE PILOT PROJECTS

THE FOREST INSECT AND DISEASE MANAGEMENT STAFF, DELAWARE, OHIO CONTINUED EVALUATIONS THIS SUMMER ON THE GYPSY MOTH RETARDATION PILOT PROJECT IN CENTRAL PENNSYLVANIA. A COOPERATIVE EFFORT BETWEEN FOREST SERVICE AND APHIS WITH TECHNICAL SUPPORT FROM SEA AND THE PENNSYLVANIA BUREAU OF FORESTRY, THE PROJECT IS DESIGNED TO EVALUATE THE EFFICACY OF USING MICROBIAL INSECTICIDES AND SEX ATTRACTANTS TO SLOW THE SPREAD OF GYPSY MOTH ALONG THE APPALACHIAN RIDGE SYSTEM. WORK THIS SUMMER INCLUDED PARASITE AND GYPSY MOTH POPULATION MONITORING.



Over 400 two-quart milk container-type pheromone traps, like the one above were placed in a ½ mile grid pattern throughout the Retardation project area.

Once collected from traps, male moths have to be counted. Summer employee, Jeff Tolle, uses a dish of water to help separate moth bodies from the wings and other debris.





Ghosts of gypsy moth past. Heavy gypsy moth defoliation in Pennsylvania's Pocono Mountains during the early 1970's took a heavy toll on the oak trees in the area. Scenes like the one above are still common today.

Dave Gansner and Bob Acciavatti (foreground) check the condition of one of the Pocono evaluation plots.

FINAL FIELD WORK ON THE WILDLIFE HABITAT-TIMBER IMPACTS PROJECT WAS COMPLETED IN THE POCONO MOUNTAINS OF PENNSYLVANIA THIS SUMMER. BESIDES EVALUATING THE EFFECTS OF GYPSY MOTH CAUSED TREE MORTALITY ON WILDLIFE HABITAT, THE PROJECT ALSO EXAMINED TREE REGENERATION, TREE COMPOSITION, AND CHANGES IN STAND DENSITY, VOLUME AND VALUE. THE EVALUATION PLOTS WERE ESTABLISHED IN THE EARLY 1970'S AND HAVE SUSTAINED HIGH GYPSY MOTH POPULATIONS AND DEFOLIATION SEVERAL TIMES SINCE. RESULTING TREE MORTALITY HAS BEEN HIGH IN CERTAIN PLOTS.

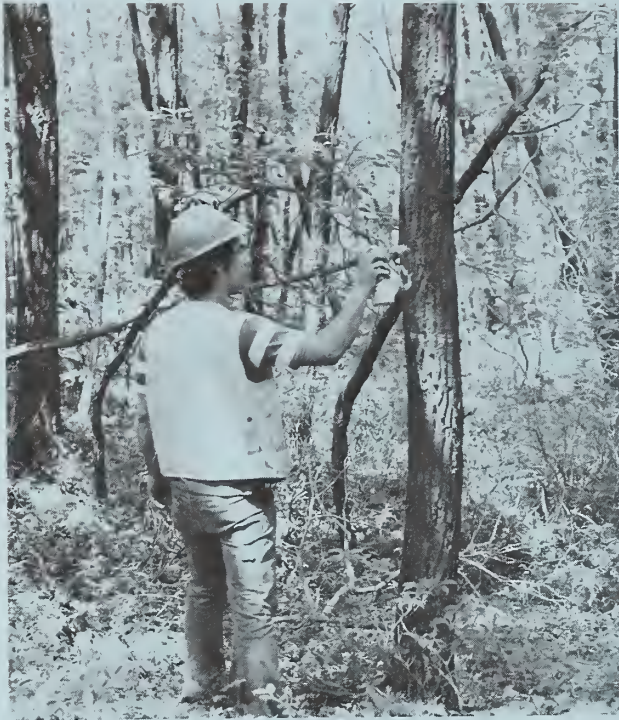




Standing knee deep in oak regeneration, Bob Acciavatti observes what appears to be a good place to collect firewood. Although few in number, plots like these lost over 50% of their volume to gypsy moth infestations in the 1970's.

One of the big losers. This old fellow could not withstand repeated gypsy moth defoliation during the early 1970's. Three-fourths of the timber value in this plot was lost to gypsy moth. Incidentally, standing at the left is Forest Service research forester, Dave Gansner.



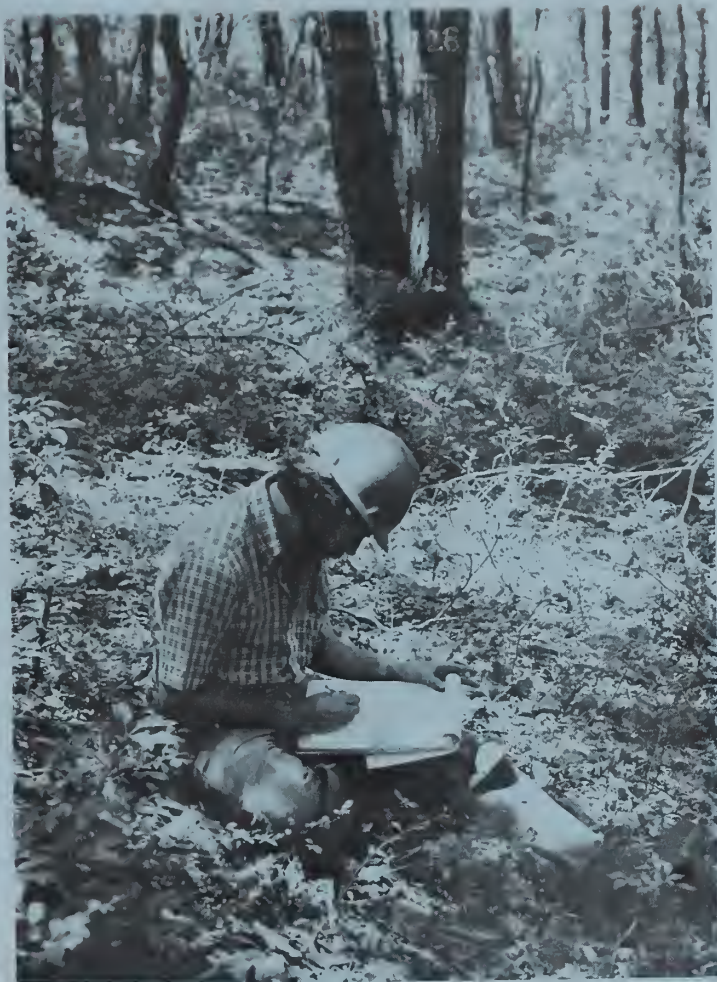


One necessary job when revisiting risk rating plots is to remark the plot trees and plot centers. Using tree paint (above) is a convenient way to label a plot tree. The painted numbers will last for about a year.

FINALLY, THE FIDM STAFF CONTINUED WORK ON THE RISK RATING PILOT PROJECT IN CENTRAL PENNSYLVANIA. NOW IN YEAR THREE OF A FIVE YEAR TERM, THIS PROJECT IS EVALUATING SEVERAL TECHNIQUES OF RATING FOREST STANDS FOR THEIR POTENTIAL TO WITHSTAND GYPSY MOTH DEFOLIATION AND SUBSEQUENT TREE MORTALITY. FOR THE FIRST TIME, THE MAJORITY OF THE SAMPLE PLOTS SUSTAINED MODERATE TO HIGH LEVELS OF DEFOLIATION--FOR THIS PROJECT THAT IS GOOD. NOW WE CAN SEE HOW THE TREE STANDS RESPOND TO GYPSY MOTH-CAUSED DAMAGE.

Since different people may measure risk rating plots during the term of the project, scribe marks at dbh on each plot tree identify the proper location to measure tree diameter. Notice female moths laying egg masses on the trees.





Every year each risk rating plot is to be revisited and surveyed. Tree growth and condition data such as diameter, crown condition, crown class, and defoliation are measured. At the left John King takes a more relaxing pose while recording plot data. Notice the numbered plot trees in the background.

What's the declination, John? At the right Jeff Tolle and John Houghton (left) check compass bearings before going to the next sample plot.



OUR NEW HOME

EFFECTIVE OCTOBER 1, 1980, THE FOREST INSECT AND DISEASE MANAGEMENT STAFF AT DELAWARE, OHIO, WILL BE RELOCATED TO MORGANTOWN, WEST VIRGINIA. OUR NEW FACILITY WILL BE IN THE NEARLY COMPLETED NEW WING (BELOW, RIGHT SIDE) OF THE FORESTRY SCIENCES LABORATORY LOCATED ON THE CAMPUS OF WEST VIRGINIA UNIVERSITY. THE LITTLE WHITE BUILDING IN THE LEFT FOREGROUND WILL NOT BE A PERMANENT PART OF OUR NEW BUILDING. OUR NEW ADDRESS WILL BE:

NORTHEASTERN AREA, S&PF-FIDM
180 CANFIELD STREET
MORGANTOWN, WV 26505
PHONE (304) 599-7130



GYPSY MOTH REVIEW MEETING
DECEMBER 9-11, 1980

THE 1980 GYPSY MOTH REVIEW MEETING WILL BE HELD THIS DECEMBER 9-11 AT THE HOLIDAY INN DOWNTOWN, BALTIMORE, MARYLAND. THE MEETING WILL BE CO-HOSTED BY THE NATIONAL GYPSY MOTH MANAGEMENT BOARD AND THE MARYLAND DEPARTMENT OF AGRICULTURE.

AS USUAL THERE WILL BE A COMPREHENSIVE REVIEW OF THE GYPSY MOTH SITUATION BY CONCERNED AGENCIES IN ADDITION TO AN UPDATE ON THE PLANS TO IMPLEMENT A COMPREHENSIVE PEST MANAGEMENT PROGRAM. THERE WILL ALSO BE STATUS REPORTS ON GYPSY MOTH RESEARCH AND REPORTS FROM VARIOUS COMMERCIAL FIRMS.

THE FIRST NOTICE FOR THIS MEETING HAS ALREADY BEEN SENT OUT. FOR THOSE OF YOU WHO DID NOT RECEIVE THIS INFORMATION, AND WISH TO ATTEND THE REVIEW, PLEASE CONTACT:

ROBERT ALTMAN
MARYLAND DEPARTMENT OF AGRICULTURE
PAROLE PLAZA OFFICE BUILDING
ANNAPOLIS, MARYLAND 21401

SEE YOU IN BALTIMORE!

FIDM PERSONEL CHANGES

RETIRED

ROBERT G. DOERNER, Field Representative, Forest Insect and Disease Management, Delaware, Ohio, retired August 29, 1980. Bob and Iris will be living at 2425 Panhandle Road, Delaware, Ohio 43015.

Good Luck, Bob!

REASSIGNMENTS

KENNETH H. KNAUER, Staff Director, Forest Insect and Disease Management, Northeastern Area S&PF, has been reassigned to the Policy Analysis Staff, Programs and Legislation, Washington Office.

PETER W. ORR, of the Forest Insect and Disease Management Staff, Washington Office, has been reassigned to Staff Director, Forest Insect and Disease Management, Broomall, Pa.

LEW McCREERY, Entomologist with Forest Insect and Disease Management Staff, Delaware, Ohio has been reassigned to FIDM Staff, Portsmouth, NH.

NEW FACES

DR. JESUS A. COTA, Integrated Pest Management Specialist, Forest Insect and Disease Management Staff, Morgantown, WV.

FRANK J. KENNEY, Biological Technician, Forest Insect and Disease Management Staff, Morgantown, WV.

NANCY A. ROOK, Biological Technician, Forest Insect and Disease Management Staff, Morgantown, WV.

ACKNOWLEDGEMENTS

We would like to thank all of you who contributed to this, the third issue of "Gypsy Moth News." Your support over the last year has made this newsletter possible.

The following agencies and individuals contributed photographs to this issue of "Gypsy Moth News."

Cover Photo

Dr. Charles R. Krause, USDA-SEA, and a wizard with the electron microscope, Delaware, Ohio.

Page 3, Lower Right

John Kegg, NJ Department of Agriculture, Trenton, NJ.

Page 5, Upper Left

John Kegg, NJ Department of Agriculture, Trenton, NJ.

Page 6, All

Pennsylvania Bureau of Forestry, Division of Forest Pest Management, Middletown, Pa.

Page 7, All

Pennsylvania Bureau of Forestry, Division of Forest Pest Management, Middletown, Pa.

Page 8, All

Wisconsin Department of Agriculture, Trade and Consumer Protection, Plant Industry Division, Madison, Wisconsin.

Page 9, All

Maryland Department of Agriculture, Annapolis, Maryland.

Page 10, All

Pennsylvania Bureau of Forestry, Division of Forest Pest Management, Middletown, Pa.

Page 11, All

Pennsylvania Bureau of Forestry, Division of Forest Pest Management, Middletown, Pa.

Page 12, All

USDA Gypsy Moth Methods Development Center, Otis AFB, Massachusetts.

All other photographs were supplied by Forest Insect and Disease Management Staff, Morgantown, West Virginia.

PHOTOGRAPH, LAST PAGE: *Male gypsy moth, magnification approximately 385X. Courtesy of Dr. Charles R. Krause, USDA, SEA.*

SEE YOU NEXT NEWSLETTER!



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